

R E M A R K S

By the above amendment, Claims 24-40 have been cancelled without prejudice or disclaimer. Thus the claims remaining in the case are Claims 1-23. Of these, Claims 8-10, 18, and 21-23 have been withdrawn as directed to non-elected species and inventions, there being no allowable generic claim. However Claims 8-10, 18, and 21-23 are all dependent claims that depend on generic claims that have not been withdrawn. Therefore if on reconsideration generic Claims 1, 16, and 20 are found allowable, then Claims 8-10, 18, and 21-23 should be found allowable since they add further limitations to these 3 generic claims.

The only rejection in the case is under 35 USC 103(a) based on Girard in view of 40 CFR 156.10 and Yerushalmi et al. 5,780,641. It is believed that the Girard reference referred to in the rejection is US 4,537,697 of record.

Near the top of page 4 of the final rejection it is stated that there are no unobvious and/or unexpected results obtained in the present invention since the prior art is well aware of the use of specific binders, plasticizers, fillers, thickeners, carriers, toxicants, and other adjuvants common to the art and use of such ingredients for the function for which they are known to be used is not a basis for patentability. It is then stated that "All the critical elements of the instant invention are disclosed."

We respectfully point out that generic Claims 1, 16, and 20 as amended do in fact set forth unexpected results which could not have been predicted from the prior art. In particular, each of present Claims 1, 16, and 20 specifies among other things that

(c) the amount of "free chlorine" released by the quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into said medium is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin on the basis of the amount of "free chlorine" that would be released in said medium by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin.

The following table presents the "free chlorine" data appearing in Applicants' Table 1 and compares the percentage improvement provided by the DBDMH versus the BCDMH over the time period of the experiment.

Time, hr	BCDMH Free Cl ₂	DBDMH Free Cl ₂	% Improvement, DBDMH v. BCDMH
0	23.1	98.8	327.7%
0.5	25.6	100	290.6%
1	23.1	85.1	268.4%
1.5	17.9	87.3	387.7%
2	16.6	81.6	391.6%
3	16.6	70.1	322.3%
4	30.7	65.5	113.4%
5	15.4	60.1	290.3%
6	10.2	59.8	486.3%

In sharp contrast, the data in Table 1 of Girard shows that the "free chlorine" from DBDMH was 80% and the "free chlorine" from BCDMH was 54%, which means that the improvement shown by Girard for DBDMH over BCDMH was only 48.2%, as compared to the much higher improved results achieved by Applicants which ranged from a 113.4% improvement of DBDMH over BCDMH to a 486.3% improvement of DBDMH over BCDMH. Thus from Girard's data one could not predict Applicants' discovery as set forth in the claims that the amount of "free chlorine" released by the quantity of the 1,3-

dibromo-5,5-dialkylhydantoin(s) introduced into the medium (or water) is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of the 1,3-dibromo-5,5-dialkylhydantoin(s) on the basis of the amount of "free chlorine" that would be released therein by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin. From Girard one could only predict a 48% improvement whereas as shown by Applicants, improvements in the range of 113% to 486% were achieved. There is nothing in Girard or Yerushalmi to suggest this, muchless make such an improvement obvious. Accordingly, Girard provides powerful evidence in support of the patentability of all of the present claims.

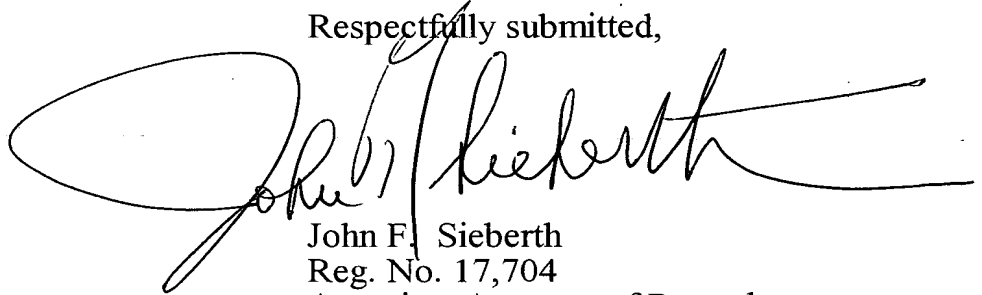
In fact, the above results given in Table 1 of Girard 4,537,697 of record, indicates that results achievable by the present invention would not be possible. We therefore submit that unexpected beneficial results have been shown to exist and that there is no basis in the prior art for anyone to have predicted or suggested that such unexpected beneficial results could be achieved. Thus Applicants' claimed subject matter of Claims 1-23 is certainly not obvious. Indeed it is clearly unobvious subject matter.

For the reasons given above the case is submitted to be in condition for immediate allowance. Notice to this effect would be appreciated.

If, however, any matters remain in requiring further consideration, the Examiner is respectfully requested to telephone the undersigned so that such matters can be discussed, and if possible, promptly resolved.

Please address all correspondence in this Application to Mr. Edgar E. Spielman, Jr. at the address of record.

Respectfully submitted,



John F. Sieberth
Reg. No. 17,704
Associate Attorney of Record

Telephone: 225-291-4600
Facsimile: 225-291-4606

CERTIFICATE OF MAILING

I hereby certify that in accordance with standard business practice, this paper (along with any referred to as being attached or enclosed) is to be deposited on the date shown below with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

July 7, 2003

Date


Marie H. Zoller

1. (Previously Amended) An article of manufacture comprising a packaging material and a product contained within said packaging material, wherein said product that is contained within said packaging material consists of (i) at least one 1,3-dibromo-5,5-dialkylhydantoin in which one of the alkyl groups in the 5-position is a methyl group and the other alkyl group in the 5-position contains in the range of 1 to 4 carbon atoms, or (ii) a mixture of at least one said 1,3-dibromo-5,5-dialkylhydantoin and at least one biocidally-inactive ingredient selected from a binder, a filler, an excipient, a dye or colorant, a perfume, a stabilizer, and/or a manufacturing by-product, said mixture containing at least 95 wt% of said at least one 1,3-dibromo-5,5-dialkylhydantoin and up to 5 wt% of said at least one biocidally inactive ingredient; and wherein said packaging material comprises a closed container in which the product is enclosed and at least (A) a label (i) suitably identifying the name of the product that is in the package, (ii) indicating that the product can be used as a biocide in the aqueous medium of at least one member of the group consisting of (1) wastewater, (2) recirculating cooling water systems, (3) once-through cooling water systems, (4) brewery pasteurizers, (5) pulp and paper mill systems, (6) air washer systems, (7) air and gas scrubber systems, and (8) decorative fountains, and (iii) providing recommended dosage rates for use of the product, and (B) at least a sticker identifying the contents contained within the packaging material as being an oxidizing agent, wherein when using the contents of the package at said dosage rates in the aqueous medium of a member of said group (a) the molar quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into the aqueous medium of said member is less than the molar quantity of N,N'-bromochloro-5,5-dimethylhydantoin that would be required to effect the same degree of microbiological control in said medium, (b) the quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into said medium releases an amount of "free chlorine" that is greater than the amount of "free chlorine" that would be released in said medium by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin, and (c) the amount of "free chlorine" released by the quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into said medium is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin on the basis of the amount of "free chlorine" that would be released in said medium by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin.

2. (Previously Amended) An article of manufacture of Claim 1 wherein said product contained within said packaging material is compacted 1,3-dibromo-5,5-

dimethylhydantoin formed from 1,3-dibromo-5,5-dimethylhydantoin having an average particle size of at least 175 microns.

3. (Previously Amended) An article of manufacture of Claim 2 wherein said product contains at least one said biocidally-inactive ingredient, and wherein said biocidally-inactive ingredient contained in said product is a binder or a manufacturing by-product, or both.

4. (Previously Amended) An article of manufacture of Claim 1 wherein said 1,3-dibromo-5,5-dialkylhydantoin is 1,3-dibromo-5,5-dimethylhydantoin, and wherein said product is in the compacted form of granules, nuggets, pellets, tablets, briquettes, or pucks.

5. (Previously Amended) An article of manufacture of Claim 1 wherein said product that is contained within said packaging material is at least 99 wt% 1,3-dibromo-5,5-dimethylhydantoin in the form of granules.

6. (Previously Amended) An article of manufacture of Claim 1 wherein said product that is contained within said packaging material is in a compacted form selected from granules, nuggets, pellets, tablets, briquettes, and pucks, and wherein at least one biocidally-inactive ingredient is contained in said product and wherein said ingredient is a synthetic polyolefin-based hydrocarbon wax binder or a micronized synthetic polyfluorocarbon wax binder, or both.

7. (Previously Amended) An article of manufacture of Claim 5 wherein said label or another label associated with said packaging material include at least one of the following:

- a) description of environmental hazards associated with discharge of the composition into the environment;
- b) description of physical and chemical hazards, and indications of how to avoid or at least reduce such hazards in use;
- c) advice on storage of the product, and on disposal of the product and containers;
- d) advice concerning practical treatment and first aid to be used in the event of contact of the composition with eyes or skin, or if the composition is ingested (swallowed) or inhaled;

- e) directions for use, including but not limited to dosage rates associated with specified use patterns; and
- f) U.S. Environmental Protection Agency (EPA) registration number, EPA establishment number, and name and address of the registrant.

8. (Previously Amended) An article of manufacture of Claim 1 wherein said at least one 1,3-dibromo-5,5-dialkylhydantoin is 1,3-dibromo-5-isobutyl-5-methylhydantoin, 1,3-dibromo-5-n-propyl-5-methylhydantoin, or 1,3-dibromo-5-ethyl-5-methylhydantoin, and wherein said product contained within said packaging material contains at least one biocidally-inactive ingredient which is a binder or a manufacturing by-product, or both.

9. (Previously Amended) An article of manufacture of Claim 1 wherein said at least one 1,3-dibromo-5,5-dialkylhydantoin is a mixture of at least two of said 1,3-dibromo-5,5-dialkylhydantoins, one of which is 1,3-dibromo-5,5-dimethylhydantoin, and wherein said product contained within said packaging material contains at least one biocidally-inactive ingredient which is a binder or a manufacturing by-product, or both.

10. (Previously Amended) An article of manufacture of Claim 1 wherein said at least one 1,3-dibromo-5,5-dialkylhydantoin is a mixture of 1,3-dibromo-5,5-dimethylhydantoin and 1,3-dibromo-5-ethyl-5-methylhydantoin, and wherein said product contained within said packaging material contains at least one biocidally-inactive ingredient which is a binder or a manufacturing by-product, or both.

11. (Previously Amended) An article of manufacture of Claim 1 wherein said at least one 1,3-dibromo-5,5-dialkylhydantoin is 1,3-dibromo-5,5-dimethylhydantoin, and wherein said product contained within said packaging material contains at least one biocidally-inactive ingredient which is a binder or a manufacturing by-product, or both.

12. (Previously Amended) An article of manufacture of any of Claims 8, 9, 10, or 11 wherein said label or another label associated with said packaging material indicates hazards associated with the handling and use of the packaged product.

13. (Previously Amended) An article of manufacture of any of Claims 8, 9, 10, or 11 wherein said label or another label associated with said packaging material

indicates the proportion or percentage of the 1,3-dibromo-5,5-dialkylhydantoin(s) in the product contained in the package, and the proportion or percentage of the biocidally-inactive ingredients in the product contained within the package material.

14. (Previously Amended) An article of manufacture of any of Claims 1, 4, 6, or 7 wherein at least 97 wt% of said product is said at least one 1,3-dibromo-5,5-dialkylhydantoin.

15. (Previously Amended) An article of manufacture of any of Claims 1, 4, 6, or 7 wherein at least 99 wt% of said product is said at least one 1,3-dibromo-5,5-dialkylhydantoin.

16. (Previously Amended) An article of manufacture comprising a packaging material and a product contained within said packaging material, wherein said product consists of (i) one or more 1,3-dibromo-5,5-dialkylhydantoins in which one of the alkyl groups in the 5-position is a methyl group and in which the other alkyl group in the 5-position has in the range of 1 to 4 carbon atoms, or (ii) a mixture of one or more of said 1,3-dibromo-5,5-dialkylhydantoins and one or more inactive ingredients, said mixture containing at least 95 wt% of said at least one 1,3-dibromo-5,5-dialkylhydantoin and up to 5 wt% of said one or more inactive ingredients, wherein said packaging material comprises a closed container in which the product is enclosed for sale and transportation, and a label that indicates that the product can be used as a biocide for wastewater, recirculating cooling water systems, once-through cooling water systems, brewery pasteurizers, pulp and paper mill systems, air washer systems, air and gas scrubber systems, or decorative fountains, or any two or more of these, and wherein said label or another label associated with said packaging material indicates that the dosage rate for at least one the foregoing eight uses or use patterns is such as to maintain a residual bromine level of 0.5-5 ppm or as needed to maintain biological control, whereby when used at said dosage rates in the aqueous medium of a member of said group: (a) the molar quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into the aqueous medium of said member is less than the molar quantity of N,N'-bromochloro-5,5-dimethylhydantoin that would be required to effect the same degree of microbiological control in said medium, (b) the quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into said medium releases an amount of "free chlorine" that is greater than the amount of "free chlorine" that would be released in said medium by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin, and (c) the

amount of "free chlorine" released by the quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into said medium is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin on the basis of the amount of "free chlorine" that would be released in said medium by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin.

17. (Previously Amended) An article of manufacture of Claim 16 wherein said product consists of at least 97 wt% of said one or more 1,3-dibromo-5,5-dialkylhydantoins, wherein said inactive ingredients are a binder or a manufacturing by-product, or both, and wherein said packaging material further comprises a sticker identifying the contents as being an oxidizing agent.

18. (Previously Amended) An article of manufacture of Claim 16 wherein said one or more 1,3-dibromo-5,5-dialkylhydantoins are selected from the group consisting of 1,3-dibromo-5-isobutyl-5-methylhydantoin, 1,3-dibromo-5-n-propyl-5-methylhydantoin, 1,3-dibromo-5-ethyl-5-methylhydantoin, and mixtures of any two or all three thereof, wherein said inactive ingredients are a binder or a manufacturing by-product, or both, and wherein said packaging material further comprises a sticker identifying the contents as being an oxidizing agent.

19. (Previously Amended) An article of manufacture of Claim 16 wherein said one or more 1,3-dibromo-5,5-dialkylhydantoins is 1,3-dibromo-5,5-dimethylhydantoin, wherein said inactive ingredients are a binder or a manufacturing by-product, or both, and wherein said packaging material further comprises a sticker identifying the contents as being an oxidizing agent.

20. (Previously Amended) An article of manufacture comprising a packaging material and a product contained within said packaging material, wherein said product consists of (i) one or more 1,3-dibromo-5,5-dialkylhydantoins in which one of the alkyl groups in the 5-position is a methyl group and in which the other alkyl group in the 5-position has in the range of 1 to 4 carbon atoms, or a mixture of one or more of said 1,3-dibromo-5,5-dialkylhydantoins and one or more inactive ingredients, said mixture containing at least 95 wt% of said at least one 1,3-dibromo-5,5-dialkylhydantoin and up to 5 wt% of said one or more inactive ingredients, wherein said packaging material comprises a closed container in which the product is enclosed for sale and transportation, and a label that

indicates that the product can be used by manufacturers in formulating biocides for wastewater, recirculating cooling water systems, once-through cooling water systems, brewery pasteurizers, recreational water, pulp and paper mill systems, air washer systems, air and gas scrubber systems, decorative fountains, or hard surface sanitizers, or any two or more of these, said recreational water being one or more of swimming pools, hot tubs, and spas, and wherein said label or another label associated with said packaging material indicates that formulators using the product are responsible for EPA registration of their formulated products, whereby in an aqueous medium: (a) the molar quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into the aqueous medium is less than the molar quantity of N,N'-bromochloro-5,5-dimethylhydantoin that would be required to effect the same degree of microbiological control in said medium, (b) the quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into said medium releases an amount of "free chlorine" that is greater than the amount of "free chlorine" that would be released in said medium by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin, and (c) the amount of "free chlorine" released by the quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin introduced into said medium is greater than the amount of "free chlorine" that could be predicted to be released by that quantity of said at least one 1,3-dibromo-5,5-dialkylhydantoin on the basis of the amount of "free chlorine" that would be released in said medium by an equimolar quantity of N,N'-bromochloro-5,5-dimethylhydantoin.

21. (Previously Amended) An article of manufacture of Claim 20 wherein said product consists of at least 97 wt% of said one or more 1,3-dibromo-5,5-dialkylhydantoins, wherein said inactive ingredients are a binder or a manufacturing by-product, or both, and wherein said packaging material further comprises a sticker identifying the contents as being an oxidizing agent.

22. (Previously Amended) An article of manufacture of Claim 20 wherein said one or more 1,3-dibromo-5,5-dialkylhydantoins are selected from the group consisting of 1,3-dibromo-5-isobutyl-5-methylhydantoin, 1,3-dibromo-5-n-propyl-5-methylhydantoin, 1,3-dibromo-5-ethyl-5-methylhydantoin, and mixtures of any two or all three thereof, wherein said inactive ingredients are a binder or a manufacturing by-product, or both, and wherein said packaging material further comprises a sticker identifying the contents as being an oxidizing agent.

23. (Previously Amended) An article of manufacture of Claim 20 wherein said one or more 1,3-dibromo-5,5-dialkylhydantoins is 1,3-dibromo-5,5-dimethylhydantoin, wherein said inactive ingredients are a binder or a manufacturing by-product, or both, and wherein said packaging material further comprises a sticker identifying the contents as being an oxidizing agent.

- 24. (Cancelled)
- 25. (Cancelled)
- 26. (Cancelled)
- 27. (Cancelled)
- 28. (Cancelled)
- 29. (Cancelled)
- 30. (Cancelled)
- 31. (Cancelled)
- 32. (Cancelled)
- 33. (Cancelled)
- 34. (Cancelled)
- 35. (Cancelled)
- 36. (Cancelled)
- 37. (Cancelled)
- 38. (Cancelled)
- 39. (Cancelled)
- 40. (Cancelled)